

# How to apply JOHNS-MANVILLE RIGID ASBESTOS SHINGLES



**JOHNS-MANVILLE**  
INCORPORATED

JOHNS-MANVILLE RIGID  
J ASBESTOS SHINGLES  
ARE FIRE-PROOF—ROT-  
PROOF—TIME-PROOF AND  
BEAUTIFUL : : : : :

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# JOHNS-MANVILLE RIGID ASBESTOS SHINGLE HANDBOOK

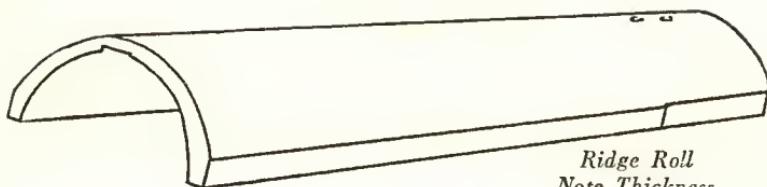


**J**OHNS-MANVILLE Rigid Asbestos Shingles may be applied over old shingle roofs without the muss and labor of removing the old roof.

They are permanent and fire-proof and meet the very particular requirements of underwriters and other fire prevention authorities.

Furthermore—the old roof provides a blanket of insulation which makes the house warmer in winter and cooler in summer.

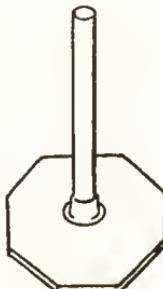
Johns-Manville Asbestos Shingles can be used for re-siding as well as for re-roofing. The opportunities for very much larger business through re-siding should not be overlooked. In doing re-siding the same general details of application for re-roofing, as explained in this book, are to be followed.



Ridge Roll  
Note Thickness



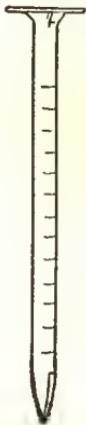
Copper Ridge Roll  
Clip



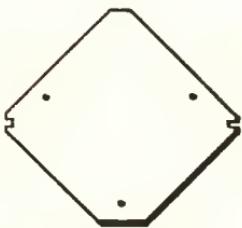
Copper  
Storm Nail



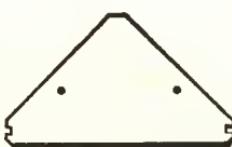
For New  
Work  
1 1/4" long



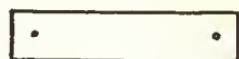
For Old  
Work  
2" long



Main Body Shingle  
No. 60, 12" x 12"  
and  
No. 70, 16" x 16"



Eave Shingle  
No. 61, 16 3/4" wide,  
second starter for No.  
60 shingles and  
No. 71, 20 3/4" wide,  
second starter for No.  
70.



No. 17  
4" x 16" (1/4" thick)  
Eave Starter for No. 60  
or No. 70.

### Data on Hexagonal Method Shingles

Catalog No. of Shingles	Weight per Sq. Applied (Lbs.)	No. Shingles per Sq.	Surface Exposed (Ins.)	Galv. Nails per Sq. (Lbs.)	No. of Storm Nails Required per Sq	Catalog No. of Starter	No. of Starters Required per 100 Lin. Ft.
60* (12 x 12")	320	160	9 1/2 x 9 1/2	1 1/2	160	{ 17(1/4") 61(1/8")	{ 75 77
70* (16 x 16")	300	87	13 x 13	1	87	{ 17(1/4") 71(1/8")	{ 75 58

\*With this style of shingle we recommend Ridge Roll shown above. Figure 93 sections of ridge roll per 100 linear feet (3" lap). Shingles Nos. 60 and 70 are both  $1/8$ " thick.

## MATERIALS

The pieces for applying Rigid Shingles consist of an eave starter, an eave shingle, a main body shingle and a ridge roll.

The shingles are furnished in two sizes:—#70, a 16"x 16" shingle; and #60, a 12"x12" shingle, with suitable starter and eave shingle for each size. Application of both is similar.

With these shingles you will require copper storm nails, as shown on the opposite page, 2" galvanized, needle-pointed nails for re-roofing and 1 $\frac{1}{4}$ " galvanized, needle-pointed nails for new work.

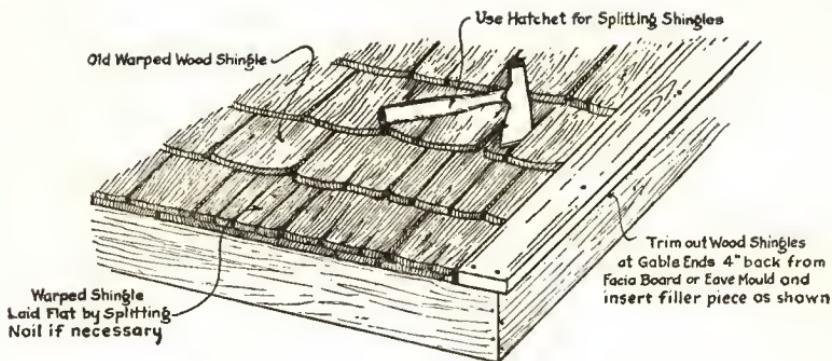
The Ridge Roll for both types of shingles, as shown on the opposite page, is the same. The Ridge Roll Clip is used as explained under the application of Ridge Roll, page 11, and is illustrated on page 10.

## HANDLING OF ASBESTOS SHINGLES

Bundles of Asbestos shingles as they are received on the job should be stacked on planks off the ground and then covered with a tarpaulin or with roofing felt.

## SPECIAL NOTE

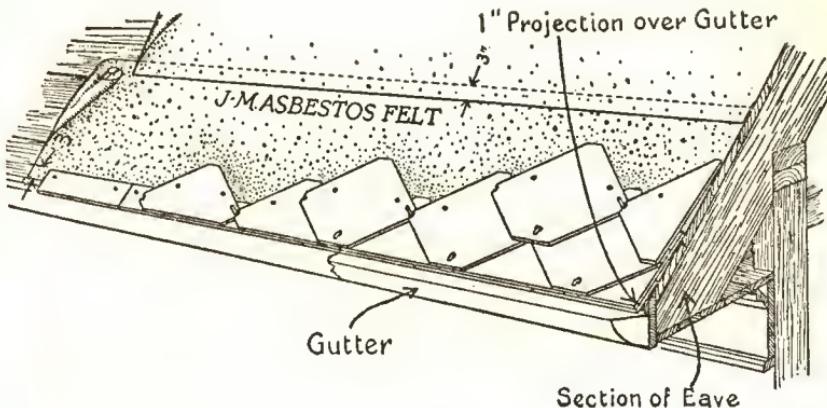
The instructions in this book are for the application of Johns-Manville Hexagonal Rigid Asbestos Shingles. The application of Johns-Manville Rigid Asbestos Shingles by the American method is so simple as to call for no instructions whatsoever. They are applied in precisely the same manner in which you have always applied wooden shingles.



## Preparation of Old Wooden Shingled Roof Surfaces

The old roof surface should be prepared to take the shingles as follows:

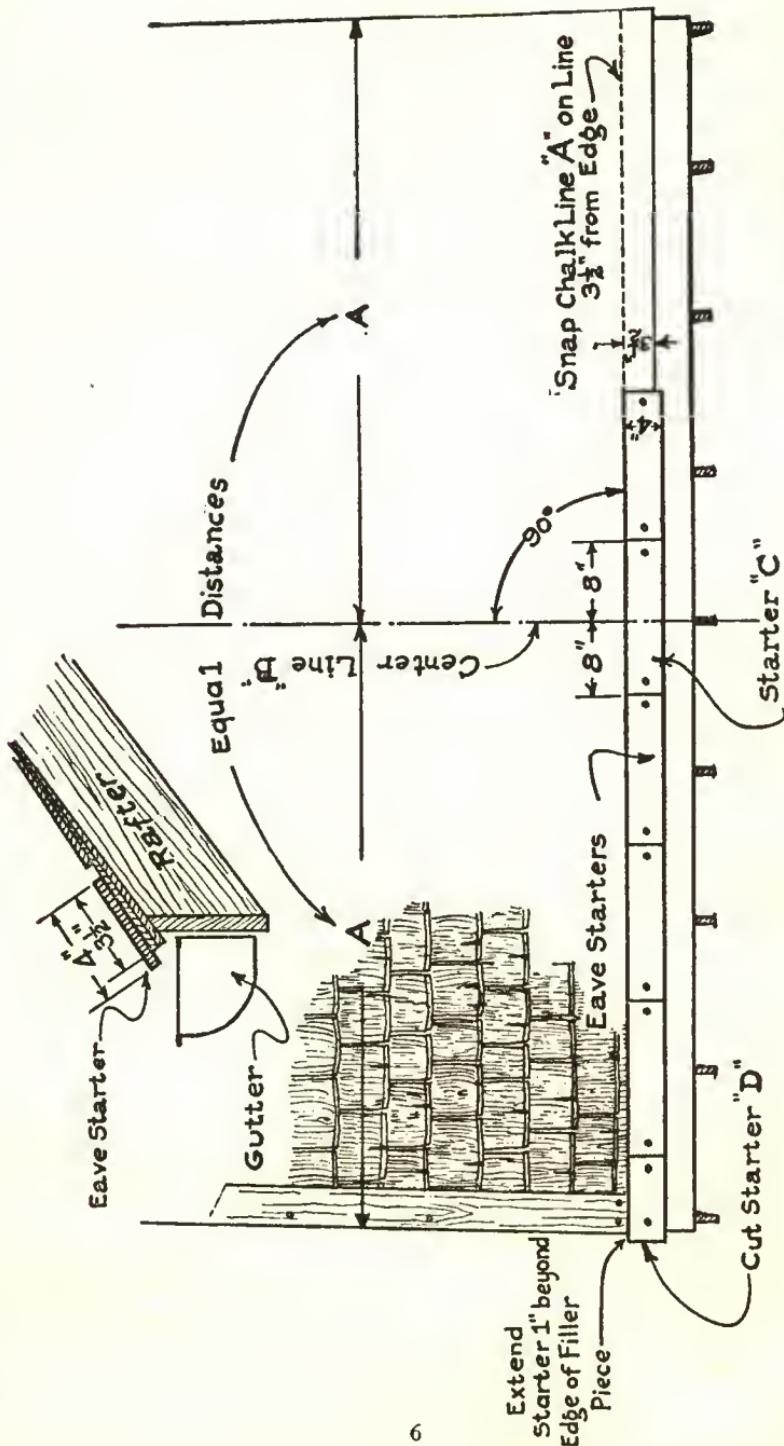
Remove the shingles at all gable ends back a distance of about 4" from the facia board or moulding and insert a gable filler piece 6" wide and of sufficient thickness to bring the board flush with the top edges of the old shingle butts. If the wood shingles are badly warped or curled they should be split at the center and the butts nailed down securely. This is required only where the roofs are extremely old and in very bad shape. At ridges and hips remove existing finish (except in the case of existing mitred hips) and apply 1"x 1 1/4" furring strip as described on page 11. No asbestos felt is required over the old shingles. After the roof deck has been prepared as above, proceed to apply as outlined on the following pages.



## Preparation of New Roof Surface

The cornice moulding should project  $\frac{1}{4}$ " above the roof sheathing or a  $\frac{1}{4}'' \times 1\frac{1}{2}''$  lath should be nailed flush with the lower edge of the roof sheathing to give the starting course of shingles the proper cant. Apply furring strips at all ridges and hips to receive ridge and hip roll as described on page 11.

Apply Johns-Manville Asbestos Felt to the roof deck sheathing, starting at the eaves and lapping same 3". (See above.) It is best to carry this felt along as the work progresses unless it is to be secured temporarily to the roof deck with lath. The first course of this felt should be flush with the eaves of the roof and when the starter course of shingles is applied, as described in the following pages, the felt should be allowed to extend on top of this course, rather than under it, in order to form a water shed at this point. This felt shall be lapped over the furring strips for ridge and hip roll from both sides thus providing two thicknesses of felt at ridges and hips. After this felt has been applied, proceed with the application of the shingles as described in the following pages.



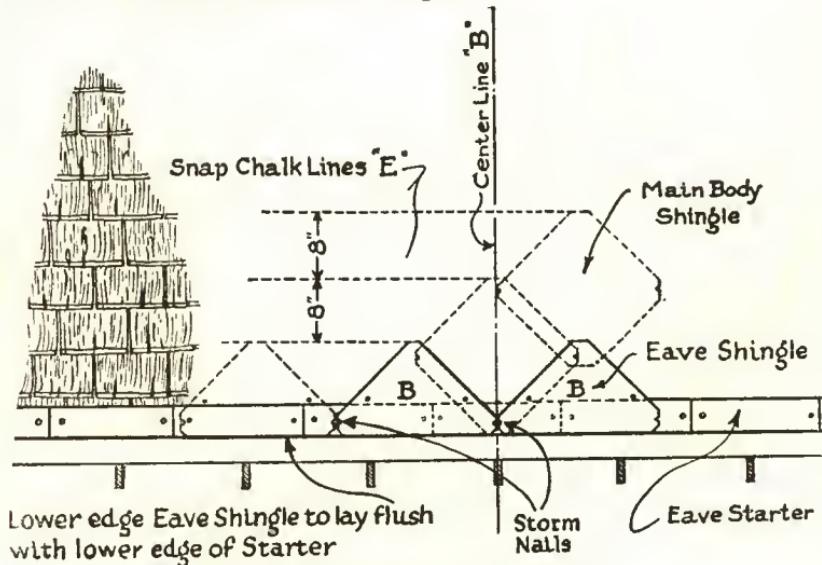
### *Method for applying eave starters.*

## Application

**FIRST:** Apply the eave starter, using a full size starter at the exact center of the eave, as shown on the opposite page and allowing a  $1/2"$  overhang beyond the butt of the old shingle, or a  $1"$  overhang beyond the sheathing of new roof deck.

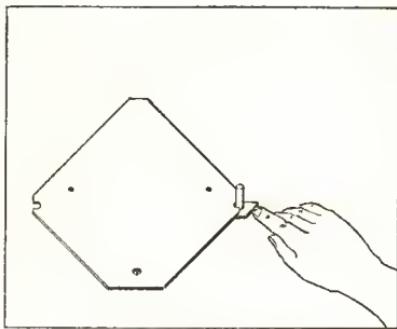
Continue these starters to both gable ends cutting, if necessary, the last starter so that it extends  $1"$  beyond the gable line.

In nailing Rigid Asbestos Shingles, just drive the nail home. No extra tension is required.

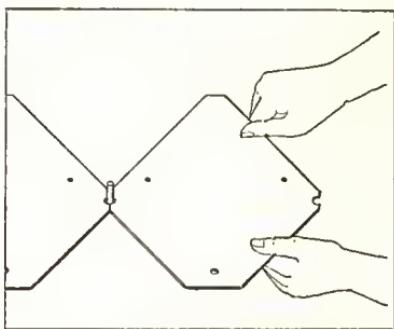


*Method of applying eave shingles*

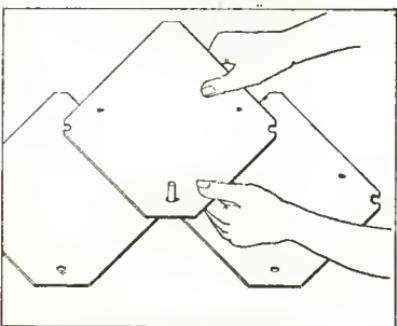
**SECOND:** Apply eave shingles over starters, as shown above, placing one end of the eave shingle directly over the centre of the starter. As these eave shingles are placed the copper storm nails should be set into the slots provided. See page 8. Secure each shingle with two nails in holes provided.



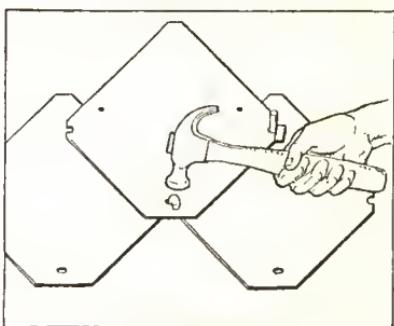
FIRST OPERATION



SECOND OPERATION

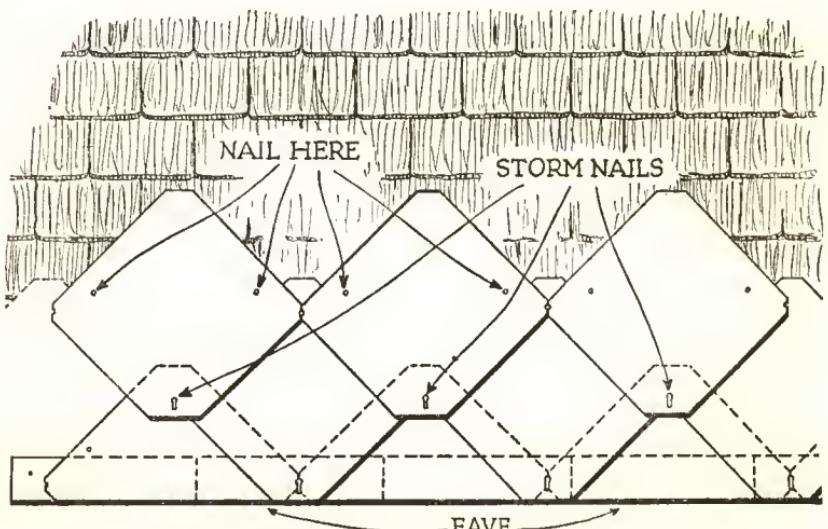


THIRD OPERATION



FOURTH OPERATION

*Method of inserting Copper Storm Nail.*



*Method of applying Main Body Shingle.*

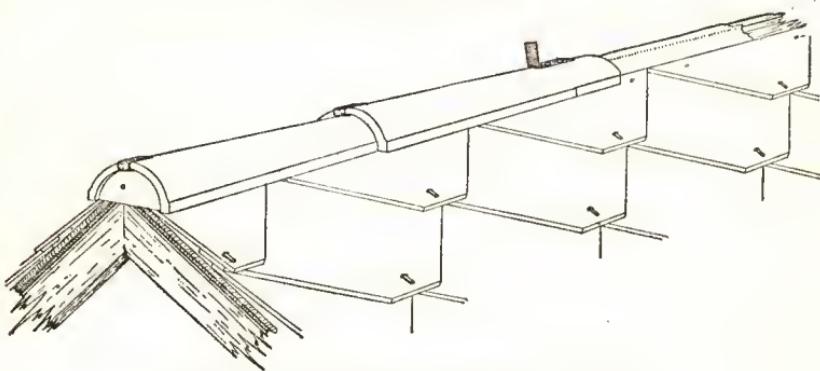
**THIRD:** Place first course of main body shingles as shown on opposite page. Slip the shingle over the exposed shank of the storm nail. The work should be lined up by first placing three shingles at starting point. Before nailing these shingles line them up so that the storm nail slots are opposite each other. Then hold the middle shingle in place and secure the same with the galvanized nails driven through the nail holes provided in each shingle. Then proceed with the application of the main body shingles, always keeping one loose shingle ahead of the shingle being nailed, in order to keep the shingles in proper alignment, as explained above, and place storm nail between the shingles, as shown on the opposite page.

If it is desired a chalk line may be used, snapping same 8" above the upper edges of each course of shingles for the #70—16"x16" shingle and 5½" for the #60—12"x12" shingle. The upper edges of the following course should fall along this line. When the end of the course is reached, cut the end shingle to the necessary width. This shingle will require an extra nail hole which should be punched at the upper edge of the shingle, away from the exposed side, so that the nail will be covered by the following course.

This shingle should also have its lower end secured. This may be done by inserting a storm nail in the shingle of the course below and then punching a hole in the cut shingle directly over the storm nail and allowing the shank to come through and be bent over. (See page 16, Fig. 4.)

The remaining courses should be laid in the same manner. Before the application of the last course of shingles at the ridge, apply over the ridge pole a strip of asbestos felt extending out on the main body of shingles. After this has been applied, put the last course of main body shingles in place, cutting out the exposed portions of the felt between the shingles, after they have been secured in place. For the application of Ridge Roll, see page 11.

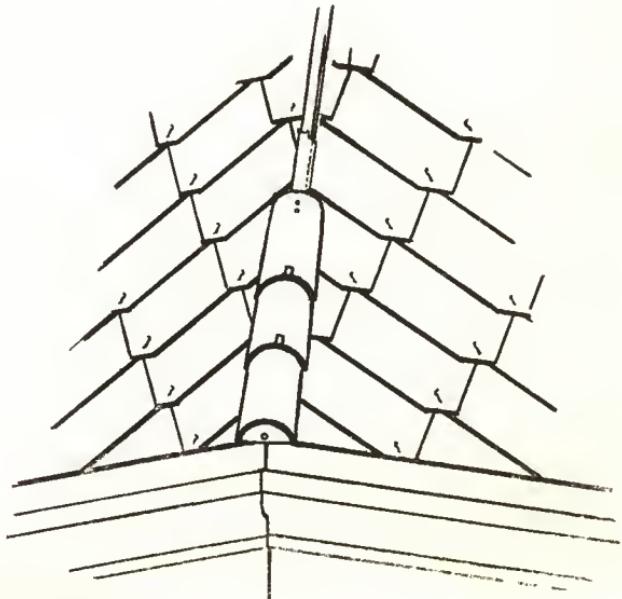
## Ridge Roll



*Ridge Roll applied on Ridge or Dormer*



*Copper Ridge Roll Clips*



*Ridge Roll applied on hip*

## Application of Ridge and Hip Roll

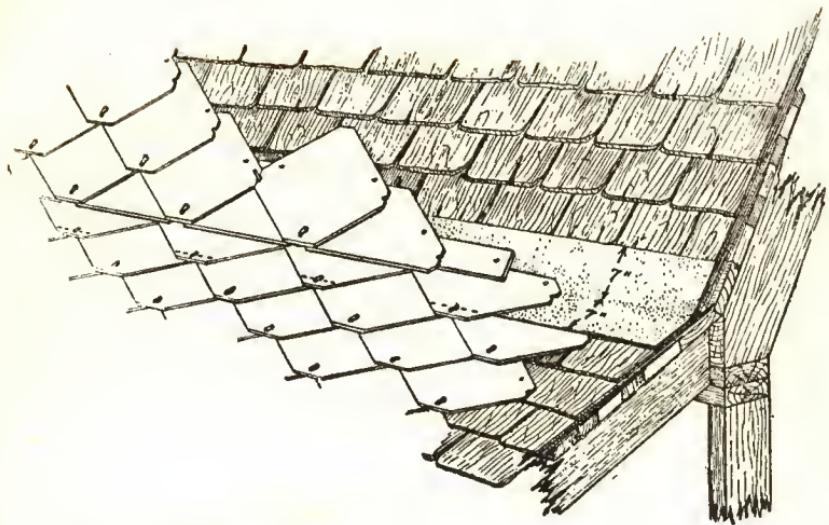
A furring strip  $1'' \times 1\frac{1}{4}''$  should be furnished at all hips and ridges for the securing of the ridge roll. Commence the application of the ridge roll on the main roof at the end of the ridge farthest removed from the quarter from which the most severe storms emanate. On dormers commence the application of the ridge roll at the face of the dormer, working back to the valleys. On hips, start at the lower end of the hip. Place the first section of ridge roll with the large end at the starting point. It will be necessary to punch a hole through this ridge roll (at the large end) for securing to the furring strip. This punching is required only on the starting pieces of ridge roll. Secure the small end with two galvanized nails driven through ridge roll fastener and ridge roll at holes provided, as shown on the opposite page.

Each succeeding section of ridge roll is secured at the large end by bending down the clip applied at the small end of the preceding section and at the small end by two galvanized nails driven through ridge roll fastener and ridge roll at holes provided.

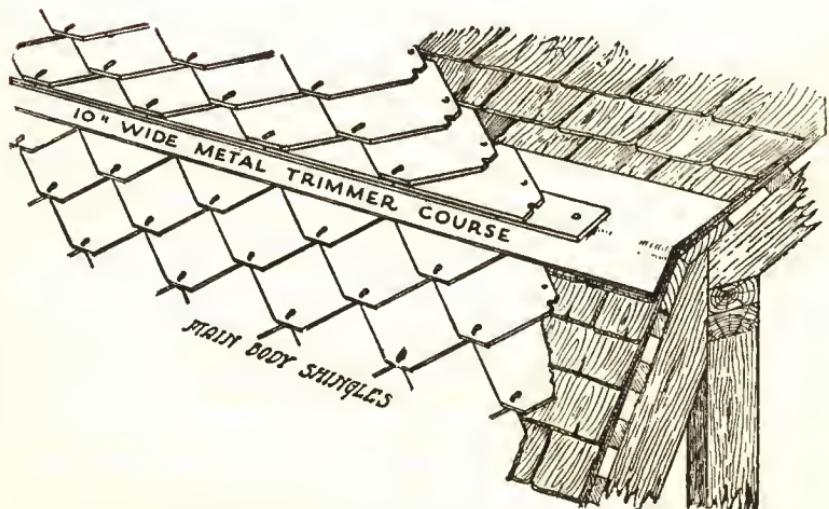
The open ends of the ridge roll may be closed with small pieces of asbestos wood furnished with the ridge roll, secured into place with a nail or screw to the furring strip.

It should be especially noted that the Johns-Manville ridge and hip roll lend an harmonious finish to the roof that is greatly admired.

Not only are they as permanent and as everlasting as the shingles themselves but they break up the flatness of a roof and give it a highly distinctive and handsome appearance.



*Detail of joint  
at sweep break.*



*Detail of Mansard  
Roof Break.*

## Sweep Break of Roof

Finish the shingles at this point the same as at all ridges, applying a strip of heavy asbestos felt under the last course and extending up on the old shingles 7". Trim out the exposed parts of the felt between the shingles. After this has been done, start applying the shingles on the upper part of the break similar to the method employed at the eaves, using the eave starter, eave shingle and main body shingles in a similar manner. See opposite page.

## Mansard Roof Break

The shingles should be finished on a mansard break the same as at all ridges. A metal trimmer course of copper should be provided at these breaks, allowing same to run down over the shingles  $3\frac{1}{2}$ " and extended up on the old shingles 7", nailed at this point, see opposite page.

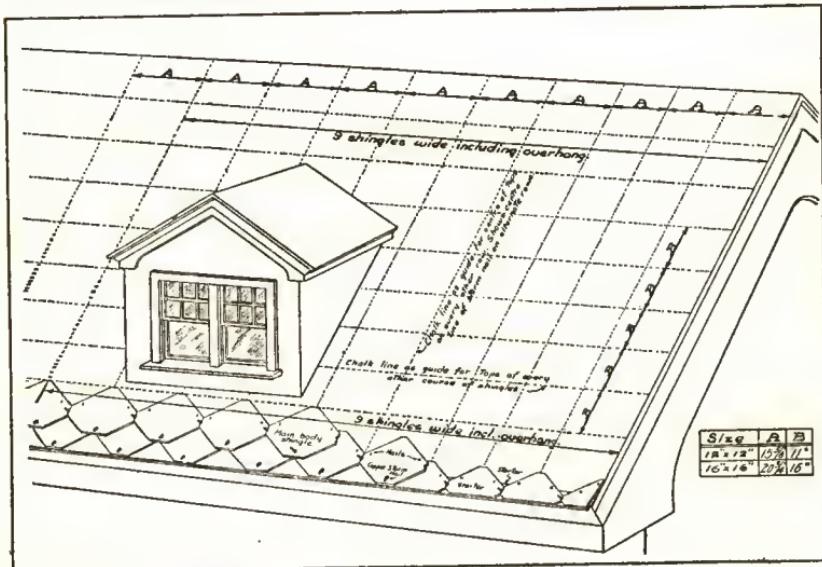
## Irregular and Cut Up Roofs

In applying shingles on irregular or cut up roofs, it is best to start the work at the gable ends. The work is started as shown on page 5. The first eave shingle should be cut in half and the main body shingles on the alternate courses running up the roof are cut in half, as indicated.

These broken roofs, mansard roofs, irregular and cut-up roofs do not really offer any difficulties whatsoever if you merely follow the above instructions with the greatest care, step by step. Study the illustrations; make sure that you understand what you are going to do before you start and you will make no mistakes and encounter no delays.

## Roofs Carrying Dormers

Care must be taken where dormers exist to see that the intersections of the courses on the main roof above the dormers will be correct. To insure this a line should be snapped across the roof, above the dormer parallel with the eaves. On this line, mark off distances equal to the distance between the points of the shingles until the sides of the dormer are reached. Continue these lines down past the side of the dormers and see to it that the points of each course of shingles, as they are applied, coincide with these lines and are equal distance from the lines marked across the top of the dormer. This is shown herewith.

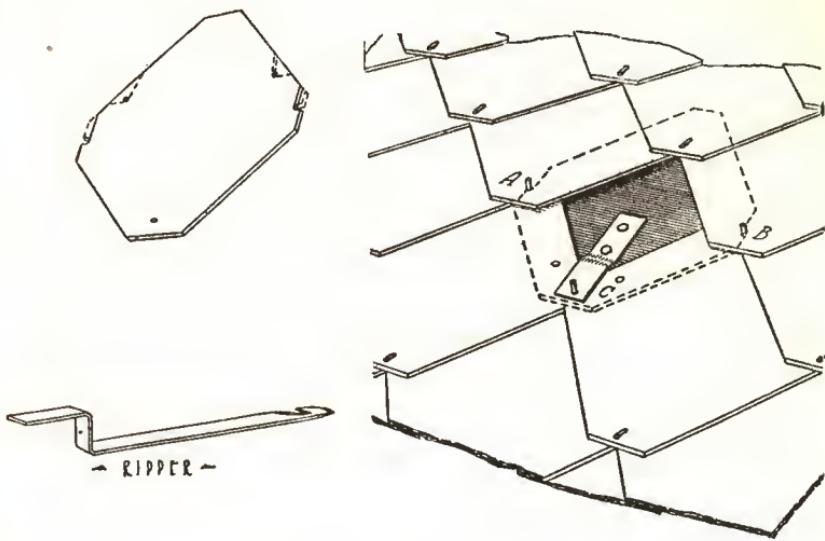


*Method of lining up shingles at dormers.*

## Flashing

Base flashing and valleys should be of 16 oz. soft rolled copper. Cap flashing should consist of either copper or 4 lb. soft lead. Valleys should be 16" in width and should be formed with a small turned back hem at either side to form a water stop.

The flashing of all parts of the roof are standard and the same as used for other types of shingles, slate and tile.



## Removal of Broken Shingles and Replacing with New Shingles

FIRST: Bend up and straighten copper storm nails at A, B and C. See above.

SECOND: Shatter the broken shingle by a hammer blow in the center and remove the pieces.

THIRD. Insert ripper (see above) under shingle and engage notch in same with the shingle nail. Strike offset on shoulder of ripper handle with a hammer and the nail will be cut off or withdrawn.

FOURTH. Punch a small strip of copper and place it over the storm nail, at C, as shown. Securely nail the upper end to the roof. This will anchor storm nail which will, in turn, hold the new shingle.

FIFTH. Prepare a new shingle, as shown at top of page, cutting out the notches at the side to allow the shingles to pass the storm nails at A and B and if it has been found impossible to remove the old shingle nails with the ripper, notch the sides of the shingle as shown.

SIXTH. Slide new shingle into place, place over the storm nail at C, bend down storm nail at A, B and C and the job is complete.

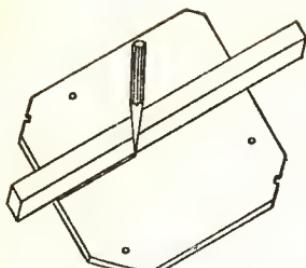


Fig. 1

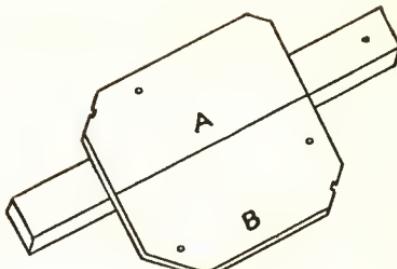


Fig. 2

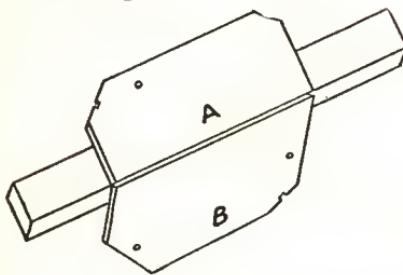


Fig. 3

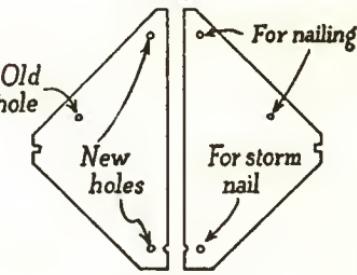


Fig. 4

## Cutting of Asbestos Shingles

Asbestos shingles may be readily cut with the shingle cutter (page 17) or in the following manner:

Scratch the shingle deeply along the line of cut (see Fig. 1) using a straight edge and a pointed instrument, such as a sharpened nail set.

Next, lay the shingle with the scored side up, over the square edge of a plank or the anvil—the scoring to be directly over the edge (see Fig. 2). Place the palm of the hand on the part marked "A" and bear down firmly—at the same time strike the portion marked "B" a smart blow with the other hand.

The shingle will break along the scored line as shown (see Fig. 3).

To make curved, circular, or angle cuts, punch a succession of holes along the line of the cut, using a pointed nail set as described below.

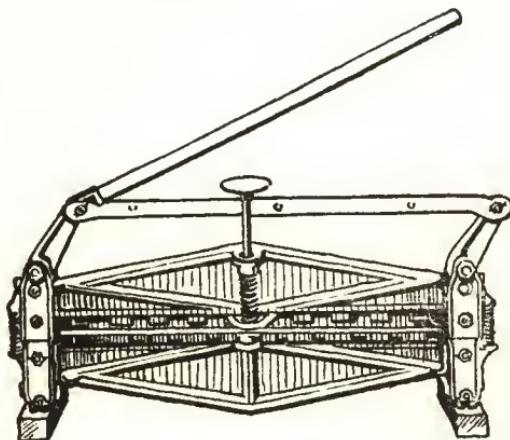
## Punching of Asbestos Shingles

The shingle to be laid on a firm, clean and flat surface. A nail or punch to be set over the point where the hole is required and then given a smart blow with a hammer.

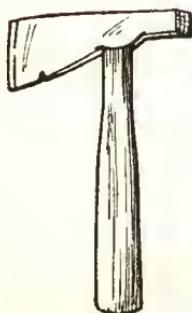
## Tools For The Application of Johns-Manville Rigid Asbestos Shingles

**SHINGLE CUTTER.** It is recommended that a shingle cutter, such as shown on this page, be used wherever considerable cutting work is required, such as jobs where many gables, dormers, etc., are included in the work.

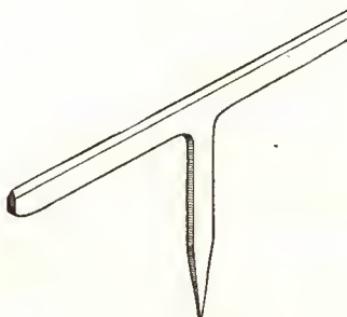
The usual tools for this work are merely a hatchet, nail punch and an anvil, as shown on this page.



*Shingle Cutting Machine*



*Hatchet*



*Anvil*



*Nail Punch*

## For Best Results

DON'T start at each side of a dormer with a full shingle and then trust to luck in order to make symmetrical lines where the shingles meet at the top of the dormer. Application should be started as explained on page 14.

DON'T forget to place an extra nail in all cut shingles which have been reduced to such a size as to cut out one of the two nail holes provided.

DON'T start at the outside edges of the roof and work toward a common center.

DON'T nail any of the shingles too tightly, just drive the nails home snug.

DON'T use anything less than a 2" nail on re-roofing work and a 1 $\frac{1}{4}$ " nail on new work.

DON'T use ordinary common nails to apply asbestos shingles. Use the regular galvanized needle-pointed shingle nails made especially for this work.

DON'T nail shingles so that nails will be exposed to the weather.

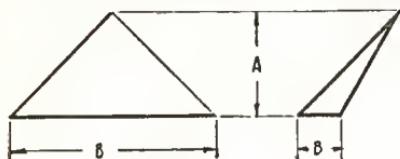
DON'T walk on the shingles without taking care to step on the storm nail points.

DON'T fail to keep your lines straight.

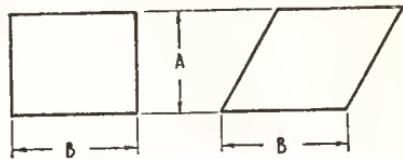
Remember that the application of Johns-Manville Rigid Asbestos Shingles, hexagonal method, is an exceedingly simple proposition and that after you have done one job carefully, following the instructions contained in this book you will never again need to read any instructions. You will know how!

Therefore we urge that on your first job you follow these instructions very carefully as you proceed. If you do this, future applications will be just as easy as doing something you have been accustomed to all your life.

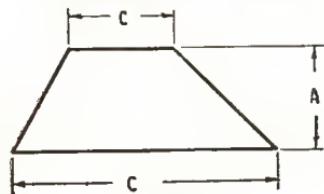
# Handy Facts to calculate area of roof surfaces



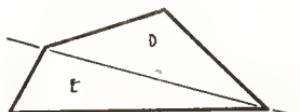
Triangles  
B = Base A = Altitude



Parallelograms  
B = Base A = Altitude



Trapezoid  
A = Altitude C = Parallel Sides



Trapezium  
D { Two triangles  
E

Area of a triangle = base  $\times \frac{1}{2}$  altitude.

Area of a parallelogram = base  $\times$  altitude.

Area of a trapezoid = altitude  $\times \frac{1}{2}$  the sum of the parallel sides.

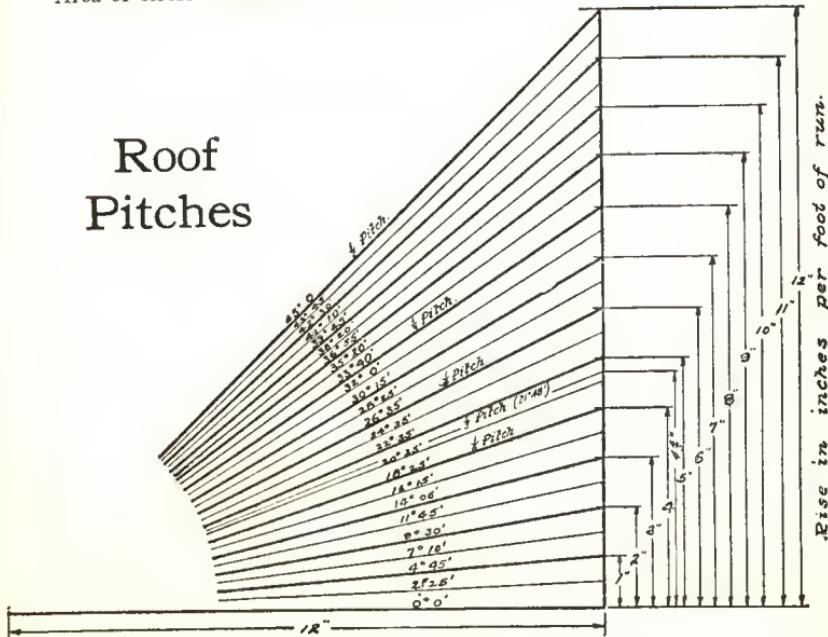
Area of a trapezium—divide into two triangles, and find the area of the triangles.

Circumference of circle = diameter  $\times$  3.1416.

Diameter of circle = circumference  $\times$  .3183.

Area of circle = diameter $^2 \times .7854$ .

## Roof Pitches



## MEMORANDA

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**WHENEVER** you need assistance or further general information regarding the proper application of Johns-Manville Asbestos Shingles, call, write or telephone the nearest Johns-Manville office, and an expert will be sent to assist you without cost to you.

## **JOHNS-MANVILLE**

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